Alamo Manhattan Blocks
City of Portland, Oregon

Land Use Review LU 20-102914 DZM GW
(formerly LU 19-225732 DZM GW)
SOWA Alamo Manhattan Blocks

Request for
South Waterfront Greenway Review

Prepared for
Alamo Manhattan

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Appendices

NOTE: *The applicant received approval for a 4-lot subdivision (The Landing at Macadam, LU 17-160442 LDS AD) on September 22, 2017 and has the option of choosing whether to comply with the regulations in effect at the time of subdivision or the regulations in effect at the time of subsequent applications. The applicant has opted to comply with the regulations that were in place as of September 22, 2017, prior to the adoption of CC2035. This narrative references those standards and the numbering and language reflect previous Title 33 regulations.*

PROJECT SUMMARY

The proposed development consists of four new multi-story, mixed-use building on Blocks 41, 42, 44, and 45 in the South Waterfront neighborhood. Two high-rise buildings are proposed on Block 41 and Block 44. These blocks are bounded by the Willamette Greenway along the Willamette river to the east, SW River Parkway to the west, SW Lane to the north, and SW Lowell to the south. Two mid-rise buildings are proposed on Block 42 and Block 45. These are bounded by SW River Parkway to the east, SW Bond to the west, SW Lane to the north, and SW Lowell to the south. SW Abernethy cuts across both Block 42 and Block 45.

The development will also include four levels of above grade parking for Block 41 and 44 and one level of below-grade parking and one level at grade for Block 42 and 45. Commercial retail spaces are provided along SW Bond, SW Abernethy, SW River Parkway.

The proposed Greenway development, adjacent to the Alamo Manhattan Blocks project, consists of 650 linear feet of Greenway along the Willamette River in the South Waterfront Neighborhood. The Greenway is located at the terminus of SW Lowell, SW Abernethy, and SW Lane Street and stretches a minimum of 100’ from top of bank to building’s edge.

The proposed development will provide a dual trail system for bikes and pedestrians as well as other river related amenities. The trails are connected to the public walk system through tree-lined, paver enhanced, pedestrian corridors at S.W. Lane, S.W. Abernethy, and S.W. Lowell St. Signage will be provided at S.W. River Parkway to draw people to the river.

The Greenway will provide bank stabilization in the form of planted rip-rap as well as habitat restoration through use of native plantings, creating increased value for wildlife. The trail system and overlooks are lit with shielded lighting. Two native stone basalt bench seating areas along the pedestrian trail provides views to the river. A landward plaza at the terminus of Abernethy provides a water feature and seating area. Street marker inserts in the bike trail at three street crossings provide orientation.

The Greenway integrates open space with proposed housing and provides multiple viewpoints of the river with minimal intrusion into the riparian edge of the river.

The site is currently vacant. Multifamily residential and commercial uses are proposed outside of the greenway. River-related uses, including trails and plazas, are proposed within the greenway.

EXISTING CONDITIONS

The site is currently vacant and is proposed for mixed-use development. The site is in the Central Commercial CX zone, within the d Design overlay and g River General overlay. The site is also located within the Central City Plan District, South Waterfront subarea. Portions of the site are located with the 100-year flood plain. See Sheet GR1.1, GR1.2 Existing Conditions.

The site is also within Inventory Site WR 18-South Waterfront of the *Willamette River Central Reach Natural Resources Protection Plan.* Resources identified include bottomland forest, scrub/shrub upland, beach, open water, and flood plain.

COMPLIANCE WITH APPLICABLE ZONING REGULATIONS *(as of 9/2017)*

Compliance with Chapter 33.130 – Commercial Zones

Response: The site is in CX zone. The table below demonstrates compliance with Chapter 33.130 and 33.510. The Land Division application for this site was filed on April 25, 2017. Under ORS 94.040(2) the applicant has chosen to use that date as its "vesting" date for 10 years thereafter. This application is subject to the regulations in place on the vesting date (April 25, 2017).

Further information is provided in the Design Review submittal provided separately.

Compliance with Chapter 33.272 – Public Recreational Trails

33.272.020 Dedication of a Public Right-Of-Way or Easement
All applicants for a land use review or for building permits on lands designated with a recreational trail symbol on the zoning map are required to grant an easement for the recreational trail. The easement must be done as part of recording a land use review and finalized prior to obtaining a final certificate of occupancy. The land may be donated to the City instead of granting an easement when the standards of Section 33.272.080 are met. Trails shown adjacent to public rights-of-way may be constructed in the public right-of-way, subject to approval from the Bureau of Transportation.

Response: The site has the major public trail symbol designation (the Greenway Trail) a and the applicant will grant an easement for the recreational trail.

33.272.030 Construction of Trails
C. South Waterfront subdistrict of the Central City Plan District. Sites in the South Waterfront subdistrict of the Central City Plan District must also comply with the regulations of 33.510.253. The regulations of that section specify when major public trails must be constructed within the South Waterfront subdistrict.

Response: The site is located within the South Waterfront subdistrict of the Central City Plan District. Compliance with the regulations of 33.510.253 is addressed later in this narrative.

E. Prior to certificate of occupancy. The trail must be constructed prior to the issuance of a certificate of occupancy, unless the site is eligible for the trust fund provisions of 33.515.260.B, or the special timing provisions of Paragraph 33.510.253.D.4.
F. Trail standards. A public recreational trail must comply with the standards of Portland Parks and Recreation for recreational trails or, where the trail is located in a public right-of-way, it must comply with the standards of the Portland Bureau of Transportation.

Response: The applicant will comply with the trail construction timeline established through Design Review.

33.272.050 Hours of Use

The recreational trail and access paths must be open to the public between the hours of 5 a.m. and 10 p.m., except as otherwise limited by the terms of an easement between the applicant and the City.

Response: The applicant will comply with the trail construction timeline established through Design Review.

Compliance with Chapter 33.440 – Greenway Overlay Zones

33.440.030 Greenway Overlay Zones

A. Purpose. The purpose of the greenway overlay zones is to implement the land use pattern identified in the Willamette Greenway Plan and the water quality requirements of Metro Code 3.07.340.B (Title 3). There are five greenway overlay zones, each with its own focus and purpose. The purpose of each of the overlay zones is stated below.

[…]

3. River General. The River General zone allows for uses and development which are consistent with the base zoning, which allow for public use and enjoyment of the riverfront, and which enhance the river's natural and scenic qualities.

B. Where these regulations apply.

1. The regulations of this chapter apply to all land and fills and structures in water within the Willamette Greenway Plan boundary designated on the Official Zoning Maps with River Natural, River Recreational, River General, River Industrial, or River Water Quality overlay zones except that the area within the interior of Ross and Hardtack Islands which is presently subject to the Ross Island Management Plan will not be subject to the regulations of this chapter during such time as the Ross Island Management Plan remains in effect. In addition, the public trail standards of Section 33.440.240 below apply to all lands designated on the Willamette Greenway Plan with the recreational trail symbol but which are outside of the greenway zones. However, the regulations of this chapter do not apply within the South Waterfront subdistrict of the Central City plan district. Sites in the South Waterfront subdistrict are instead subject to Section 33.510.253, Greenway Overlay Zone in South Waterfront Subdistrict.

33.510.253 Greenway Overlay Zone in South Waterfront Subdistrict

A. Purpose. The regulations of this section….

B. Relationship to other regulations. Development within the Greenway Overlay Zone in the South Waterfront Subdistrict is also subject to other regulations of the Portland City Code. Development within the Greenway Overlay Zone may also be subject to the regulations and review procedures of state and federal agencies including the Oregon Division of State Lands, the National Marine Fisheries Service, the US Army Corps of Engineers, and the Oregon Department of Fish and Wildlife.

C. Where these regulations apply. The regulations of this section apply to sites within the South Waterfront Subdistrict where any portion of the site is in the Greenway Overlay Zone, shown on the Official Zoning Map.

Response: The official zoning map of the City shows the affected property zoned CXdg (Central Commercial zoning district, with the Design Overlay zone and Greenway Overlay zone). The site is located within the South Waterfront Subdistrict as illustrated on Map 510-1. Therefore, the regulations of this section apply to the site.

D. Required South Waterfront Greenway improvements. Adjustments and modifications to this subsection are prohibited.

1. Required landscaping.

a. When development on the site, or alterations to structures, the site, or rights-of-way are made, and BDS determines that the value of the proposed alterations on the site is more than $155,900, the site must be brought into conformance with the landscape requirements of Paragraph E.5.f. that apply to subareas 2 and 3 of the South Waterfront Greenway Area. The value of the alterations is based on the entire project, not individual building permits. It is the responsibility of the applicant to document the value of the required improvements. The following alterations and improvements do not count toward the dollar threshold of this subsection:

(1) Alterations required by approved fire/life safety agreements;

(2) Alterations related to the removal of existing architectural barriers, as required by the Americans with Disabilities Act, or as specified in Section 1113 of the Oregon Structural Specialty Code;

(3) Alterations required by Chapter 24.85, Interim Seismic Design Requirements for Existing Buildings;

(4) Improvements to on-site stormwater management facilities in conformance with Chapter 17.38, Drainage and Water Quality, and the Stormwater Management Manual; and

(5) Improvements made to sites in order to comply with Chapter 21.35, Wellfield Protection Program, requirements.

Response: Value of proposed alterations exceed $155,900 therefore the site must comply with Paragraph E.5.f.

b. Caps on the cost of required landscaping. Required landscaping costing more than 10 percent of the value of the proposed alterations does not have to be installed. When all required landscaping is not being installed, the priority for which landscaping is to be installed is:

(1) Trees in subarea 2;

(2) Shrubs in subarea 2;

(3) Ground cover in subarea 2;

(4) Trees in subarea 3;

(5) Shrubs in subarea 3;

(6) Ground cover in subarea 3; and

(7) Other required landscaping;

Response: The Willamette Greenway improvements includes areas within subareas 1, 2, and 3. The required landscaping is estimated to cost less than 10% of the proposed alterations.

Planting requirements for sub-area 1 start 3’ above ordinary low water (5.90) and extends to ordinary high water. Per BES requirements, this planting will be placed in large woody debris that starts at 8.90 and extends to ordinary high water at 18.22.

Sub-area 2 has native plantings per South Waterfront species list with 100% compliance. Sub-area 3 has 100% compliance with ordinance.

c. Supplemental application requirement. Where landscaping is required by this paragraph, the applicant must submit a landscape plan to BDS that shows that the landscaping will

grow to meet the landscape standards of Subparagraph E.5.f, below, within five years. The landscape plan must be certified by a licensed landscape architect, or by a qualified restoration specialist as part of a formal City revegetation project under authority of Portland Parks and Recreation or the Bureau of Environmental Services.

Response: A landscape plan certified by a licensed landscape architect is included as Sheets L.001, L.002, L.003, L.004, and L.005. Planting plans will be designed to meet coverage as indicated in E.5.f within 5 years.

2. *Bank improvements. In subarea 1, when there is any regrading, bank stabilization, or other activities affecting the contours and composition of soil, the requirements of Paragraph E.5.f for subarea 1 must be met.*

Response: The project includes regrading, bank stabilization, and other activities within subarea 1. See Sheets C2.0-C3.0. The requirements of E.5.f for subarea 1 are addressed below.

3. *Trail and pedestrian connections and public viewpoints. When development on a site, or alterations to structures, the site, or rights-of-way are made which add more than 50,000 square feet of floor area to the site, the applicant must provide public access easements that will accommodate a trail, pedestrian connections that meet the standards of Paragraph e.5.d., Trail and pedestrian connections; and Paragraph E.5.e., Public viewpoints. The square footage added to the site is calculated based on the total amount added, regardless of the amount demolished;*

Response: The proposed development will add more than 50,000 square feet of floor area to the site, and this standard is applicable.

4. *Timing of improvements. The applicant may choose one of the following options for making the improvements required by this subsection:*
   a. *Option 1. Under Option 1, required improvements must be made as part of the development or alteration that triggers the required improvements;*
   b. *Option 2. Under Option 2, the required improvements may be deferred if the following are met:*
      (1) *The applicant must provide the BDS with a performance guarantee for the improvements. See 33.700.050, Performance guarantees; and*
      (2) *The required improvements must be constructed or installed within 4 years of issuanc e of the Certificate of Occupancy or within the timeline approved through a South Waterfront GreenwayReview. See Chapter 33.851.*

Response: It is the intent to install bike path, pedestrian trail, river bank improvements, and landscape in accordance with Option 2.

5. *Landscaping monitoring and reporting. Monitoring required landscaping is the ongoing responsibility of the property owners. If landscaping is required by the subsection, the owner must submit a report to BDS documenting that the landscape standards of Subparagraph E.5.f., below, have been met on the site. The report must be submitted within 1 year of the installation date, or within the timeline approved through a South Waterfront Greenway Review. See Chapter 33.851.*

Response: Report will be submitted within 1 year of installation date.

E. Development standards. Generally, proposals are subject to design review. In most instances, applicants may choose between meeting development standards or going through South Waterfront greenway review. In some instances South Waterfront greenway review is required.

1. Where these regulations apply. The regulations of this subsection apply in the South Waterfront Greenway Area as shown on Figure 510-2. The regulations apply to development and alterations to structures, sites, and rights-of-way.

2. Design review. New development, and changes to the land or structures including excavations and fills, bridges, and docks are subject to design review, unless exempted by Paragraph E.4.

3. South Waterfront greenway review. South Waterfront greenway review is required for the following:

a. New development or exterior alterations that do not meet the standards of Paragraph E.5 and are not exempted by Paragraph E.4;

b. New development, or changes to the land or structures, riverward of top of bank, including excavations and fills, bridges, and docks, unless exempted by Paragraph E.4.

4. Exempt from design review and South Waterfront greenway review. The following are exempt from design review and South Waterfront greenway review;

a. Changes to the interior of a building where there are not exterior alterations;

b. Normal maintenance and repair;

c. Excavations and fills of less than 50 cubic yards;

d. Dredging, channel maintenance, and the removal of gravel from the river; and

e. Emergency procedures necessary for safety or the protection of property.

f. The placement of up to four single piles, or two multiple-pile dolphins for each 100 feet of shoreline for an existing river-dependent or river-related use.

g. Development of public streets identified in the adopted South Waterfront District Street Plan, Criteria and Standards are exempt from design review, but not greenway review.

Response: The proposed improvements are not exempted by Paragraph E.4 and are subject to Design Review and South Waterfront greenway review. The requirements of Design Review are addressed in the Design Review application submitted separately. The requirements of South Waterfront greenway review are addressed in Section 4 of this narrative.

5. Development standards. The following development standards must be met unless the applicant chooses South Waterfront greenway review. Adjustments and modifications to these standards are prohibited.

a. Non-landscaped area. Limiting the percentage of non-landscaped area allowed in the South Waterfront Greenway Area ensures that the area will be configured to accommodate a minimum percentage of living plant cover. Non-landscaped area includes all aboveground structures and paving materials, including permeable paving materials.

1. Subareas 1 and 2. Up to 20 percent of the portion of the site in subareas 1and 2 may be covered by non-landscaped area; however, paved surfaces that are required under the provisions of Paragraph E.5.e., Public viewpoints, are exempt from this limitation. Non-landscaped area may be no closer than 10 feet of the top of bank line as shown on Map 510-21, South Waterfront 2002 Top of Bank Line;

2. Subarea 3. Up to 20 percent of the portion of the site in subarea 3 may be covered by non-landscaped area. However, required trail and pedestrian connection improvements are exempt from this limitation.

Response: The Willamette Greenway development site area includes subareas 1, 2, and 3. The sites are landscaped as noted:

- Subareas 1 and 2: Subareas 1 and 2 do not contain required public viewpoints and 80% of these subareas is landscaped. Landscaping meets 100% of the requirements of the Willamette Greenway Development for sub-areas 1 and 2. The requirement of 80% shrubs and 20% ground cover has been met or exceeded.
- Subarea 3: Landscaping meets 100% of the requirements of the Willamette Greenway Development for sub-area 3. The requirement of 80% shrubs and 20% ground cover has been met or exceeded.

b. Buildings. Buildings are allowed within the South Waterfront Greenway Area if they meet E.5.b.(1) and (2) and either E.5.b.(3) or (4). Other buildings or portions of buildings are not allowed within the South Waterfront Greenway Area.

i. The site meets the non-landscaped area requirements under E.5.a., above; and
ii. The building does not obstruct required pedestrian connections and trails; and
iii. The building is river-dependent or river related; or
iv. All of the floor area of the building is in Retail Sales And Service uses and the following are met:

- *The building has less than 1,000 square feet of floor area;*
- *The building is entirely within subarea 3; and*
- *The building is located landward of the South Waterfront recreational trail.*

Response: Buildings are not located within South Waterfront Greenway.

c. Fences and walls. Fences and walls are allowed in subarea 3 of the South Waterfront Greenway Area if they are no more than 3 feet in height and do not obstruct the required pedestrian connections and trails. Fences and walls are not allowed in subareas 1 and 2 of the South Waterfront Greenway Area.

Response: A retaining wall with a 42-in high guardrail for areas with more than 30 in. of drop is proposed within Subarea 2. See Sheets L.001-L.003. Because fences and walls are not permitted by this section, the proposed fence is subject to South Waterfront greenway review.

d. Major public trails and pedestrian connections.

i. Purpose. Major public trails provide public access to and along both sides of the Willamette River. Major public trails are one of the tools used to comply with the public access requirements of the Comprehensive Plan and the Willamette Greenway Plan. Pedestrian connections ensure that there is adequate, safe, and direct pedestrian access from the adjacent development and from the district as a whole to the major public trails.
ii. Major public trails. Major public trails must meet the following standards. When required by Subsection D., sites with major public trail symbol shown on the Official Zoning Maps must provide easements that would accommodate construction, maintenance, and public use of a major public trail that meets the following standards. See Figure 510-3.

- *Location. The major public trail must be located in the South Waterfront Greenway Area shown on Figure 510-2. All portions of the major public trail must be at least 10 feet and no more than 75 feet from the top of bank line as shown on Map 510-21, South Waterfront 2002 Top of Bank Line; however, any portion of the major public trail that is within 45 feet of the top of bank line as shown on Map 510-21, South Waterfront 2002 Top of Bank Line, is subject to the maximum non-landscaped area limitations of Subparagraph E.5.a.;*

Response: The site contains a major trail symbol and a major public trail is required. The bicycle trail is less than 75' from top of bank, and the pedestrian pathway is a minimum 10' from top of bank. The trail location complies with this section.

- *Width. The major public trail must consist of two paths, each at least 12 feet in width;*

Response: The proposed major public trail consists of two paths: a bicycle path and a walkway. The bicycle path is 12 ft. in width, and the walkway is 10 ft. in width in order to connect with the 10 ft. walkway to the north. The walkway width is addressed through South Waterfront greenway review.

- *Landscaped median. The two paths must be separated by a landscaped median at least 6 feet wide. Landscaping within this median must meet the requirements of Paragraph E.5.f. The landscaping may be interrupted by public access connections between the two paths;*

Response: The two paths are separated by a landscaped median of at least 6 ft. wide for the entire length. The median landscaping meets the standards of E.f.5.

- *Use. The path closest to the river must be designated for pedestrians only. The path farthest from the river must be designated for bicycles and other non-motorized transportation modes;*

Response: The path closest to the river is designated as a pedestrian walkway. The path farthest from the river is designated for bicycles and other non-motorized transportation mode permitted in the park.

- *Connectivity.*
  - *The major public trail or major public trail easement must connect to the existing major public trails or trail easements on adjacent sites; and*
  - *The major public trail or major public trail easement must connect to the required pedestrian circulation system on the site.*

Response: The proposed major public trail easement connects to the existing trail easements and trails on the sites to the north and south, and to the required pedestrian circulation systems on the site.

- *Additional standards. In addition to the standards of this subparagraph, the standards of Chapter 33.272, Major Public Trails, must also be met.*

Response: The standards of Chapter 33.272 are addressed in this narrative.

iii. Pedestrian connections. When a major public trail or major public trail easement is required, at least one pedestrian connection must be provided between the trail easement and any accessway that terminates on the site.

Response: A major public trail is required, and three accessways are proposed to connect to the trail: SW Lowell Ave, SW Abernathy Ave, and SW Lane Ave. A major public trail easement will be provided per the conditions of approval of LU 17-160442 LDS AD.

e. *Public viewpoints.*

i. *Purpose. Public viewpoints provide stopping places and clearings along the South Waterfront Greenway trail and the Willamette River where the public can view and enjoy the natural and scenic qualities of the Greenway and the river. Public viewpoints are one of the tools used to comply with the public access requirements of the Comprehensive Plan and the Willamette Greenway Plan.*

ii. *Viewpoint requirements. A public viewpoint must be provided on sites designated with a viewpoint symbol on Map 510-15. There are two types of viewpoints within the district: […]*

Response: Map 510-15 does not indicate any public viewpoints on the subject site, and no viewpoints are required or proposed.

f. *Landscaping.*

1) *Coverage. Eighty (80) percent of the area that is not covered by buildings, trails, or other allowed non-landscaped area must be covered by shrubs or ground cover, and all trees required by this paragraph must be installed in the ground and healthy;*

2) *Existing landscaping. Existing plants may be used to meet the standards of this paragraph, if protected and maintained during construction as specified in Section 33.248.065. However, the following plants must be removed:*

- *Plants listed as a nuisance or prohibited on the Portland Plant List;*
- *Plants listed in Table 510-4, South Waterfront Greenway Nuisance Plants.*

3) *Required landscaping in subarea 1. In subarea 1, the area beginning 3 feet above the ordinary low water line must meet the following requirements:*

- *Shrubs. At least 80 percent of the required landscaped area must be planted in shrubs;*
- *Trees. Trees are not required, but are allowed;*
- *Ground cover. All of the required landscaped area that is not planted with shrubs or trees must be fully covered with ground cover plants;*
- *Plant list. Only plants listed in Table 510-2, Subarea 1 Plant List, may be planted;*
- *Installation of landscaping. All planting must be of a sufficient size and number to meet the coverage standards within five years. Restoration size plant material, including bare-root, is allowed and recommended. Planting is not required to meet the size and spacing requirements of 33.248.030, Plant Materials. Planting is not allowed during the summer.*

Response: Subarea 1 contains approximately 12,801 sq. ft.; none of this area is covered by buildings, trails, and other non-landscaped areas, and 80% (10,241 sq. ft.) of the uncovered area must be landscaped. As shown on Sheet L.002, 100% of the required landscape area is planted. As shown and described on Sheet L.003, the proposed landscaping is listed on the Subarea 1 Plant list of the Portland Plant List.

4) *Required landscaping in subarea 2. In subarea 2 the required landscaping is:*

- *Shrubs. At least 80 percent of the landscaped area must be planted in shrubs;*
- *Trees. At least one tree must be planted for every 400 square feet of landscaped area. Trees may be clustered;*
- *Ground cover. All of the landscaped area that is not planted with shrubs or trees must be fully covered with ground cover plants;*
- *Plant List, may be planted. At least eight different species must be planted; and*
- *Installation of landscaping. All planting must be of a sufficient size and number to meet the coverage standards within 5 years. Planting is not required to meet the size and spacing requirements of 33.248.030, Plant Materials.*

Response: Subarea 2 contains approximately 31,956 sq. ft.; 5,784 sq. ft. is covered with trails and other non-landscaped areas and 26,172 sq. ft. is subject to this requirement. 80% (20,938 sq. ft.) of the uncovered area must be landscaped. As shown on Sheet L.002, 16,860 sq. ft. (80.5%) of the required landscape area is planted in shrubs; and 10,102 sq. ft. (48%) is planted in ground cover. In addition, 53 trees are required. As shown on Sheet L.002, 53 trees are proposed.

As shown and described on Sheet L.002, the proposed landscaping is listed on the Subarea 2 Plant list of the Portland Plant List.

5) Required landscaping in subarea 3. In subarea 3, the required landscaping is:

- *Shrubs. At least 60 percent of the landscaped area must be planted in shrubs. At least 50 percent of the shrubs used to meet this requirement must be listed on Table 510-3, Subarea 2 and 3 Plant List;*
- *Trees. At least 1 tree must be planted for every 1,000 square feet of landscaped area. At least 50 percent of the trees used to meet this requirement must be listed on Table 510-3, Subarea 2 and 3 Plant List;*
- *Ground cover. All of the landscaped area that is not planted with shrubs or trees must be fully covered with ground cover plants. At least 50 percent of the ground cover plants must be listed on Table 510-2, Subarea 2 and 3 Plant List;*
- *Plant list. Except as allowed by (1), (2) and (3), only plants listed in the Table 510-2, Subarea 2 and 3 Plant List may be planted. The following plants are prohibited:*
  - *Plants listed as a nuisance or prohibited on the Portland Plant List;*
  - *Plants listed in Table 510-4, South Waterfront Greenway Nuisance Plants.*
- *Installation of landscaping. All planting must be of a sufficient size and number to meet the coverage standards within five years. Planting is not required to meet the size and spacing requirements of 33.248.030, Plant Materials.*

Response: Subarea 3 contains approximately 36,897 sq. ft.; 12,833 sq. ft. is covered with trails and other non-landscaped areas and 24,064 sq. ft. is subject to this requirement. 80% (19,251 sq. ft.) of the uncovered area must be landscaped. As shown on Sheet L.002, 13,296 sq. ft. (69%) of the required landscape area is planted in shrubs; 9,916 sq. ft. (51%) is planted in ground cover. In addition, 19 trees are required. As shown on Sheet L.002, 19 trees are proposed.

As shown and described on Sheet L.002, the proposed landscaping is listed on the Subarea 3 Plant list of the Portland Plant List.

g. Other development. Other development is allowed within the South Waterfront Greenway Area if it meets Subparagraphs g.(1) and (2) and either g.(3) or (4).

1) The site meets the non-landscaped area requirements under E.2., above;
2) The development does not obstruct required pedestrian connections and trails; and
3) The development is located in subarea 3; or
4) The development is river-dependent or river-related.

Response: The proposal includes other development not listed above: removal of an existing wood pier; and regrading and restoration of the river bank, which includes retaining wall to support the trail. Each of the proposed developments are located within Subarea 1, which meets the standards of E.2 above; does not obstruct required pedestrian connections and trails; and is

river-related as resource enhancement projects. The standards of g. (1) and (3) and g. (4) above are met.

F. Greenway goal exception. Approval of an exception to Statewide Planning Goal 15, Willamette Greenway, is required to locate development or a right-of-way that is not river-dependent or river-related within 25 feet of the top of bank. A greenway goal exception is not required to add revetments to a riverbank. The approval criteria are in Section 33.440.360, Greenway Goal Exception.

Response: No development that is not river-dependent or river-related is located within 25 ft. of the top of bank. A greenway goal exception is not required.

Compliance with Chapter 33.851 – South Waterfront Greenway Review

33.851.010 Purpose

South Waterfront greenway review provides flexibility within the South Waterfront greenway area and ensures that:

- *Development will not have a detrimental impact on the use and function of the river and abutting lands;*
- *Development will conserve, enhance and maintain the scenic qualities;*
- *Development will contribute to enhanced ecological functions to improve conditions for fish and wildlife;*
- *Development will conserve the water surface of the river by limiting structures and fills riverward of the greenway setback;*
- *Development that does not meet the standards of 33.510.253, South Waterfront Greenway Regulations, will be consistent with the Willamette Greenway Plan and the Central City Plan; and*
- *The timing of greenway improvements may be flexible to ensure successful implementation of the greenway in a more comprehensive manner.*

Response: Four components of the proposed development are subject to South Waterfront Greenway Review:

- Proposed guardrails atop the proposed retaining walls within Subarea 2.
- Greenway Trail width of 10 ft. rather than 12 ft.
- Removal of the existing wood pier
- Regrading, excavating, and armoring river bank

33.851.100 Review Procedures

A. Procedures. South Waterfront greenway reviews are processed through a Type III procedure. Greenway goal exceptions are processed through a Type III procedure, and must be approved by City Council. See Section 33.440.360, Greenway Goal Exception, and Chapter 33.850, Statewide Planning Goal Exceptions.

B. Concurrent Design Review required.

a. Procedure. Proposals subject to South Waterfront greenway review are also subject to Design Review, which will be processed through a Type III procedure and reviewed concurrently with the South Waterfront greenway review.

b. Approval criteria. While all proposals must meet Sections II and III of the South Waterfront Design Guidelines, applicants may choose to meet Section IV, Greenway Development Plan Option, in addition to Sections II and III. I an applicant chooses to meet Section IV of the Design Guidelines, they gain additional flexibility through a development agreement with City

Council. The development agreement can set out timing of improvements that differs from that required by Chapter 33.510, and can establish financial arrangements for improvements and maintenance that include City Agencies as partners.

Response: This greenway review is being submitted concurrently with Design Review process for Block 41, 44, 42, and 45. The applicant is not proposing to meet Section IV of the Design Guidelines. Conformance with Section III is addressed in Section 4 of this narrative.

33.851.200 Notice to State Parks and Recreation Division

BDS will send a copy of all applications for South Waterfront greenway review to the Parks and Recreation Division of the Oregon Department of Transportation. The applications will be sent certified mail, return receipt requested. The notice of decision on all South Waterfront greenway reviews will also be sent to the Parks and Recreation Division.

33.851.300 Approval Criteria

Requests for a South Waterfront greenway review will be approved if the review body finds that the applicant has shown that all of the following approval criteria are met:

A. Consistent with the purpose of the South Waterfront greenway. The following approval criteria must be met for all proposals:

1. When compared to the development required by the standards of 33.510.253, the proposal will better enhance the natural, scenic, historical, economic, and recreational qualities of the greenway;

Response: 33.510.253.E.5.c limits fences and walls within Subarea 3 to 3 ft. in height and does not allow fences and walls within Subareas 2 and 3. The proposed 42-in. fences are required by building code to provide fall protection for retaining walls proposed for portions of the walkways. The retaining walls are required to accommodate the steep slopes of the bank and provide an ADA-accessible route across the site. The fences can be constructed of natural-appearing materials in order to enhance the natural and scenic qualities of the greenway. The greenway trail provides economic and recreational qualities by connecting an incremental trail system along the Willamette River and providing continuous access from north to south.

33.510.253.E.5.d provides standards for the location, dimensions, and landscaping for major public trails. The purpose of this standard is to provide public access to and along both sides of the Willamette River and to provide public access and connectivity to the Willamette Greenway trail. To that end, limitations have been established regarding the location and dimensions of the trail. The pedestrian pathway closest to the river is 10 ft. in width rather than 12 ft. in width.

Two trails are proposed the full length of the greenway: a 10-ft. wide pedestrian trial closest to the river and a 12-ft. wide bicycle/multimodal trail. These path locations were determined based on connecting to the existing paths to the north and south. Further, the width of the trails was designed to align with the existing trails to the north and south. The curvilinear design of the trail allows for a dynamic experience as the trail users cross the site and provides visual interest for trail users. The proposed trail location and design adequately accommodate trail users while allowing the design team to respond to significant topography while restoring significantly deteriorated riparian habitat at the river's edge.

33.510.252.E.5.g allows development not noted elsewhere in this section if it meets g.1 and 2 or g.3 or 4. The proposed development includes the removal of the existing wood pier along the site's river frontage and regrading, excavating, and armoring river banks. These activities restore

the river bank to a more natural state, provide additional shallow water and riparian habitat along the bank, and allow for unobstructed views of the river from the site.

2. *When compared to the development required by the standards of 33.510.253, the proposal will better ensure a clean and healthy river for fish, wildlife, and people;*

Response: While the existing bank condition provides some natural functions, it is largely limited to shallow mildly sloped alcove areas (4H:1V) that exist at the north and south end of the sites below elevation 10 ft. Below elevation 10 ft the existing bank slopes are typically 2H:1V or flatter, while above this elevation the bank is much steeper. The existing bank material consists largely of miscellaneous fill, including large concrete rubble and asphalt pavement. Finer materials are present within the existing alcove areas that can provide limited shallow water habitat. Existing riparian vegetation consists of a row of shore pines at the top of existing bank, with ivy and blackberry. While the shore pines provide some canopy habitat, there is no understory habitat, and groundcover is comprised of dense ivy and blackberry. Any vegetation below top of bank consists of ivy and blackberry that has grown down from the top of bank. There are also several derelict piles along the bank. The bank is relatively steep riverward of the site, dropping off at a 2H:1V to 3H:1V slope, meaning that shallow water habitat in this area is limited to the fringes of the river.

The bank will be laid back and stabilized to protect against erosion from high water flood events and from wave and wake damage that can occur during low water periods. For this reason, the bank stabilization must extend below ordinary low water to prevent the bank stabilization measures (riprap) from being undermined. Due to the height of the bank with very steep existing slopes (approximately 22 ft. height from elevation 10 ft to elevation 32 ft.) and the limited greenway width that must also provide additional uses (e.g. trails) laying the bank back to a slope flat enough to not require engineered stabilization measures (riprap) is not feasible. Therefore, riprap will be used to stabilize the bank below ordinary high water (elevation 18.22) at a maximum 2H:1V slope while incorporating engineered large woody debris to provide high flow refuge and shelter for fish species. Where riprap is used below ordinary high water to stabilize existing mild slopes the riprap will be overlain with clean river rock and sediment to provide enhanced shallow water habitat. To allow for flatter vegetated slopes above ordinary high water, retaining walls must be used to make up the height to the trail elevation. Retaining walls have been located near the trail and as high up the slope as possible to minimize the inundation duration. The area below the retaining walls will be vegetated with native trees and shrubs that will provide a slow moving flow fringe during high flow events adjacent to the retaining wall.

While the bank cannot be completely naturalized due to site constraints, including tall, steep existing banks, matching grades to the adjacent properties, and providing user trail space, the bank design does incorporate the following enhancement features:

- Existing contaminated sediment will be removed and armored to prevent additional erosion of contaminated sediment into the river.
- Existing slopes 2H:1V or flatter will be preserved, and the riprap will be overlain with large river rock, this is largely at the fringe of the river, so the existing shallow water habitat will be preserved while the bed material will be enhanced with river rock to increase ecological function.
- The existing slopes 4H:1V or flatter in the two alcove areas will be preserved and the riprap will be overlain with clean fine river rock and sediment, similar to what exists at those areas now.
- Derelict piles within the work area will be removed

- Engineered large woody debris will be incorporated into the riprap below proposed ordinary high water to provide refugia and shelter and meet NMFS SLOPES V requirements
- Engineered large woody debris within the planting requirements of subarea 1 will be configured to maximize retention of fine sediment to create planting pockets
- Engineered large wood debris below the planting requirements of subarea 1 will be configured to maximize refugia and shelter for fish
- Above ordinary high water the slopes will be a maximum of 3H:1V and stabilized with native vegetation. Vegetation stabilization is adequate for these slopes above ordinary high water because the duration of exposure to wave and wake damage is much less than below ordinary high water.
- Bank enhancement and stabilization grading will result in a net cut of 5,260 cubic yards of cut and material removal (1,030 cubic yards below OHW)

The bank design will also be reviewed and permitted by the USACE and OR-DSL.

The thalweg of the Willamette River pushed to the west near the site due to Ross Island before migrating back towards the east downstream of Ross Island. This means that bank below the ordinary high water is relatives steep, ranging from 2:1 to 4:1 with the steepest portions being adjacent to the site; there is not extensive shallow water habitat at the property. The steepness of the bank both above and below water and the miscellaneous fill that makes up the bank limits the functionality of the existing site to provide rearing habitat. The steep slopes, the lack of large wood and the lack of healthy riparian vegetation means there is little existing sensitive habitat features that needs to be preserved during construction There are minor pockets of existing fine sediment in the alcoves that provide some habitat for benthic invertebrates. While this sediment must be removed to install the armoring, fine sediment will be used to overtop the armoring to restore benthic habitat. To provide long term ecological enhancement, pilings and contaminated soils within the riverbank will be removed. Armoring will be placed to prevent additional erosion of contaminated material.

It is anticipated that the majority of the bank regrading will be performed using excavators, which will excavate and regrade from the top of bank down and then install stabilization and large woody debris, while working back to the top of bank. A turbidity curtain will be used to prevent fine sediment from leaving the site. Rock may be placed temporarily and intermittently to build up platforms for excavators to work within the portion of the site below water. The plans call to stabilization to occur to elevation 0, meaning that the depth of water will be approximately 6 feet at the deepest portion of the site during construction periods, which is generally well within the operating reach of a large excavator. Barge mounted equipment may be used if needed, most likely for removal of the deeper pilings, but it is anticipated that most of the work will be performed from the bank. All work will occur during the in-water work window when use by ESA-listed species is minimal.

3. When compared to the development required by the standards of 33.510.253, the proposal will better embrace the river as Portland's front yard; and

Response: The proposal will fill in the Willamette Greenway gap and provide easy access to the greenway through continuation of the greenway trails to the north and south, and access through Abernathy and Lowell Streets, connecting it to South Waterfront businesses, residents, and users. The large wooden pier structure and miscellaneous pilings will be removed to provide unobstructed views of the Willamette River, Ross Island, and the native vegetation established to the east of the pedestrian trail. Native vegetation will be planted to improve riparian health, provide resiliency of the greenway, and facilitate connections between users and the natural

environment. Trails, benches, and overlooks will provide both active and passive restoration opportunities.

4. *When compared to the development required by the standards of 33.510.253, the proposal will better provide for stormwater management.*

Response: Stormwater Management will be provided for the Greenway according to the City of Portland Stormwater Management Manual, using vegetated pollution reduction facilities to treat runoff from impervious areas. Due to existing site contamination the facilities will be lined to prevent infiltration. The stormwater will discharge directly to the Willamette River, so no flow control is required. See Appendix A.

B. ***Development riverward of top of bank.*** *If development is proposed riverward of top of bank, the following approval criteria must be met:*
   1. *The riverbank will be protected from wave and wake damage; and*
   2. *The proposal will not:*
      a. *Result in the significant loss of biological productivity in the river;*
      b. *Restrict boat access to adjacent properties;*
      c. *Interfere with the commercial navigational use of the river, including transiting, turning, passing, and berthing movements;*
      d. *Interfere with fishing use of the river;*
      e. *Significantly add to recreational boating congestion; and*
      f. *Significantly interfere with beaches that are open to the public.*

Response: Development proposed riverward of top of bank includes:

- Portions of the retaining wall near block seawall
- Removal of existing wooden pier
- Removal of concrete slab at base of seawall
- Excavating, regrading, and armoring river bank

Below ordinary high water the proposal calls for slopes between 2H:1V and 4H:1V, above ordinary high water it calls for slopes between 3H:1V and 5H:1V with some retaining wall required to prevent steeper slopes. Flatter slopes that would be required to fully naturalize the bank are not feasible due to the height of the existing steep bank and the available greenway width that must also accommodate other uses. Decreases in slope occur both below and above ordinary high water. Existing mild slopes (~4H:1V) are preserved, especially in flatter existing alcove areas at the north and south of the site (see attached plans). Riprap is required for bank stability to protect against erosion from river flow and waves and wake. This stabilization is also needed to prevent erosion of existing contaminated sediment and contaminant migration into the river.

The site is degraded in its existing condition and the proposal will not results in any significant loss of biological productivity in the river. In fact, the proposal will enhance biological productivity by replacing contaminated sediment with clean material, incorporating large woody debris into the stabilization, and providing native plantings to enhance provide riparian vegetation. Removal of the wooden pier structure will enhance the biological productivity as the pilings are contaminated. To provide cover, slow moving margins, and refuge for salmonids as the water level rises, engineered large woody debris structures will be incorporated into the riprap slope. Below elevation 10 feet the large woody debris will be placed to create refuge and shelter, above elevation 10 feet large woody debris will be placed to create successful planting pockets for vegetation establishment. Vegetation because vegetation survival below elevation 10 feet is low even on mild naturalized slopes, such as Ross Island and Cottonwood Bay. The established vegetation will provide the refuge and shelter

functions. This which approach is consistent with the requirements of NMFS in their SLOPES V biological opinion.

Engineered Large Woody Debris (LWD) is being incorporated into the riprap slope to provide many of the ecological functions that would be provided by vegetation in a natural bank setting with flatter slopes. Unfortunately, due to the tall and steep existing bank, flatter slopes that would be required to eliminate the need for engineering bank stability are not feasible. The LWD provides a roughened surface that creates turbulence and eddies during high flows that allow fish to more easily navigate to refuge and shelter areas that are also provided by the large woody debris. Multiple types of LWD structures are provided to provide complexity and diversity (, see attached plan for structure types), overall layout is still being revised. LWD structures will be installed along the entire bank between ordinary high water and a few feet below ordinary low water. Native natural area riparian plantings will be provided above ordinary high water.

While the majority of the bank is over-steepened with miscellaneous fill and rubble, there are two existing mildly sloped alcove areas with fine sediment that exist near ordinary low water to approximately elevation 10 feet. The existing sediment and contaminated pilings will be removed and replaced with clean fill. Existing grades will be preserved, with riprap overlain with clean fine sediment installed. The fine sediment will provide habitat for benthic invertebrates' shallow water rearing. These alcove areas will also provide slower moving water refuge areas for fish that use the site.

Incorporating Large Woody Debris (LWD) into the riprap will reduce the sheer forces and will create by providing turbulence and eddies and add complexity to the habitat. LWD will also create refuge for juvenile salmonids, which is a habitat type currently not present within the project area. that allow for fish to more easily navigate to refuge and shelter areas that are also provided by the large woody debris and vegetation where established. The bank slopes will not be uniform, there is variation in the bank with alcoves and points that also provide flow complexity.

The existing trees are at the top of bank and largely outside of the 100-year floodplain, so they provide little ecological function for the river. The proposed bank stabilization and enhancement will lay back the bank, requiring removal of the trees. The bank slopes will allow for natural vegetation above ordinary high water that will interface with the river on a regular basis. Below ordinary high water engineered large woody debris will be incorporated to provide ecological function. Where possible the engineered large woody debris will support planting pockets to provide vegetation below ordinary high water. Engineered large woody debris details are provided in the attached plan set, however the overall layout has not been revised yet, and will be revised to distribute more large woody debris near the ordinary high water to support plantings.

Due to the tall and steep existing banks, and the area of the multi-functional greenway, mild slopes (approximately 5:1) are not feasible, and a combination of steeper slopes (2:1 and flatter) and retaining walls are necessary. Without the use of retaining walls on the river side of the trails, the trails would have to drop approximately 6 feet in the center of the site, which is not consistent with the greenway goals. Therefore, the retaining walls are integral with the trail and are a river-related use. The maximum height of the retaining wall at the central portion of the site is 6 ft. The maximum height of the retaining wall at the south portion of the site is 10 ft. This higher wall is required to transition to the steep bank and existing concrete wall/pier at this location. The retaining wall is located close to the trail to ensure allow for it is to be as far away from the river as possible, with the toe of the wall being at least 4 ft above ordinary high water. This minimizes the duration that flow will interface with the wall. The walls are required to allow the area above ordinary high water to have 3H:1V or flatter slopes to support riparian natural area plantings, therefore the area in front of the wall (water side of the wall) will be planted with trees and shrubs that will likely be a similar height to the wall, providing

the slow-moving fringes and flow variability to benefit fish. The retaining walls allow for the river to connect to riparian more natural vegetation while still providing trail and use access in the remainder of the greenway.

The existing river bank is comprised of miscellaneous fill material, is steep, and does not have a functional riparian area, therefore there is no riparian area to protect. Vegetation below the top of bank line is sparse and consists largely of ivy and blackberry growing down from the top of bank. The top of bank does have sparse shore pines that will be removed in the process of laying back and enhancing the bank. The bank stabilization and enhancement work will occur within the in-water work window to minimize impacts on endangered fish species because they are generally not present during this time.

Erosion control will consist of a turbidity curtain installed in the river along the project site just outside of the work zone, tying into the bank on either side of the work areas. This will keep turbidity in place during construction, which will be allowed to settle prior to removal of the turbidity curtain after construction. The turbidity curtain consists of a top floating boom that will contain floatable debris that will be cleared and disposed periodically.

Work will occur from the bank with equipment access from the site. Excavators will most likely be used for removal and placement of material. It is anticipated that the bank will be excavated from the top down to allow equipment access to the lower reaches as the slope flattens. Once material is removed the new armoring, consisting of filter blanket, riprap, and river rock in the lower portion, will be placed from the bottom up in lifts. Large logs with intact root wads will be incorporated into the riprap from ordinary low water (approximately elevation 5 ft (CoP) to Ordinary High Water (elevation 18.22 ft (CoP)), with more concentration at Ordinary Low Water.

Excavators will be used to remove the top structure of the wooden pier to the supporting piers, with some hand dismantling as needed. Excavators will then be used to pull the supporting piers from the ground. Additional piers in the work area will also be pulled by excavators. All piers within the work zone will be removed, either by pulling or by digging out during bank excavation. Piers that are not within the work zone will remain in place.

C. ***Proposals that do not meet the requirements of 33.510.253.E.*** *If the proposal does not meet all of the standards of Subsection 33.510.253.E., the following approval criteria must be met:*

Response: These criteria apply to:

- Proposed fence less than 45 feet from TOB
- Segments of the Greenway Trail less than 12 feet wide
- Removal of the existing wood pier
- Regrading, excavating, and armoring river bank

1. *The proposal will restore and enhance the natural character of the area adjacent to the river and will allow more significant creation of habitat for fish and wildlife that could aid in supporting the recovery of native species of fish; and*
2. *The proposal will support or enhance the function of the greenway area as an active and vibrant waterfront and will provide sufficient opportunities for human interaction with the greenway.*

Response: As noted above, four components of the proposed greenway improvements do not meet the requirements of 33.510.253.E. Generally, the purpose of these standards is to protect, conserve, enhance and maintain the qualities of lands along the Willamette River while also

provide visual and physical access to the river, support development of the South Waterfront District, and respond to local, state, and federal regulations.

- *Fences within Subarea 2*

Proposed retaining walls require a 42" guardrail for fall protection (building code requirement) since the height of the retaining wall is greater than 30". Retaining walls are designed to provide grade transition between bank stabilization/naturalized riverbank with trails/open space areas beyond the top of bank. The retaining walls allow for flatter slopes both below top of bank (to provide 3H:1V and 4H:1V slope for landscape plantings) and beyond the top of bank (to provide flat areas for trails and moderate slopes 10H:1V between trails and setback for open space).

The proposed guardrail is consistent with the railing within the greenway to the north.

- *Greenway Trail width of 10 ft. rather than 12 ft.*

The subject site is adjacent to developed sites to the west and the east. To connect with the existing trails, the pedestrian trail closest to the river is proposed to be 10 ft. wide rather than 12 ft. wide. The total width of the trails will be 22 ft. These dimensions are proposed to connect to the 10-ft. pedestrian trail to the north of the site and the 12-ft. multimodal trail to the south of the site.

Portland Parks and Recreation identifies trail types and widths in the 2009 Trail Design Guidelines for Portland's Park System. While not directly applicable here, it does provide guidance for the width of trails dedicated to walkers and bicyclists/other mobility devices. This plan identifies 10 ft. as a preferred width for walking trails. While the Willamette Greenway trail is intended to provide a spacious and comfortable experience, this suggests that 10 ft. would provide that experience as adequately as 12 ft. would.

- *Removal of the existing wood pier*

There is an existing wood pier adjacent to the site that is proposed for removal. Currently, the pier interrupts views from the site and would interfere with many of the goals of the South Waterfront Greenway. The wood pier also consists of creosote pilings that will be removed to prevent any additional contamination.

- *Regrading, excavating, and armoring river bank*

Shading in the Willamette River is used primarily for bank refuge and not for water quality or temperature impacts because the benefit of shading on such a large river is limited. Refuge will be provided by incorporating large wood with root wads and a top dressing of river rock below ordinary low water.

There are several fish species listed under the federal Endangered Species Act (ESA) with the potential to occur within the vicinity of the project area. The life stage of these species that are most vulnerable to environmental degradation and habitat loss are juveniles, which rely on shallow water habitat for shelter and as a food source. The proposed restoration project will remove many of the man-made structures that are currently present along the bank, remove fill material along the shoreline, and make the grade of the river bank shallower, which will increase the area of shallow water habitat available for juvenile salmonids. The current degraded state of the habitat along this portion of the river is typical for sites in Portland that have been subject to

past industrial use. The proposed project will increase both the quantity and the quality of the habitat for native fish species in the City of Portland.

Not only will in-water conditions be enhanced, but the quality and the quantity of riparian vegetation will also be enhanced by increasing the density of native trees and shrubs. Shading on the Willamette River is not as important as providing a source of large wood and biota, which benefit native fish species.

Bank stabilization will be installed to Elevation 0, approximately 6 ft below Ordinary Low Water to prevent undermining of the riprap toe, which would potentially cause the bank to deform. At the lower portion of the bank where the existing slopes are milder (as low as 4:1) the bank will not be regraded, but contaminated sediment will be removed, riprap installed, and then overtopped with either fine sediment (4:1 slopes and flatter) or river rock (2:1 slopes to 4:1 slopes). Since this portion of the bank will not be regraded there is no net change in the shallow water habitat area and all existing shallow water habitat will be preserved. Removal of contaminated material and installation of clean materials will increase the habitat value of the site, as well as incorporating Large Wood into the bank stabilization and providing native riparian plantings. Construction details of the large woody debris and alcove areas are provided in the attached plans.

D. ***Buildings within the South Waterfront greenway area.*** *If the proposal includes buildings that do not meet the standards of 33.510.253.E.5.b, at least one of the following approval criteria must be met:*
[…]

Response: There are no buildings within South Waterfront Greenway area. This criterion does not apply.

E. ***Trails, viewpoints, and pedestrian connections.*** *If the proposal will include trails, viewpoints, or pedestrian connections that do not meet the standards of Subsection 33.510.253.E.5.d. or e. the proposal must meet approval criteria E.1. and E.2., and either E.3. or E.4.:*

1. *The proposed trail, viewpoints, and pedestrian connections will safely accommodate expected users;*
2. *The trail will include one or two paths and the width of the proposed trail, or the combined width of the paths that make up the trail, will be at least 18 feet; and*
3. *The proposed trail, viewpoints, and pedestrian connections will respond to topographic constraints of the site; or*
4. *The proposal meets all of the requirements of the South Waterfront Greenway Development Plan and the proposed trail, viewpoints, and pedestrian connections comply with those identified on the site as part of the plan.*

Response: The proposed pedestrian trail does not meet the width standards of 33.510.253.E.5.d and these criteria are applicable. The applicant is not proposing a South Waterfront Greenway Development Plan, and E.1, E.2, and E.3 must be met.

The proposed trails will safely accommodate the expected users, and include two paths with a combined width of 22 ft. The proposed trail responds to the topographic constraints of the site by curving westward, and the proposed viewpoint takes advantage of the drop in grade from the upper level of the site to the riverbank to provide territorial views of the Willamette River and the greenway.

F. Landscaping and non-landscaped area. If the proposal will include landscaping or non-landscaped area that does not meet the standards of Subsection 33.510.253. E.5.a. or 5.f., the proposal must meet either approval criteria F.1. or F.2.:

1. *The proposal will mitigate for any reductions in vegetative cover through the use of methods including near shore and bank restoration work, bioengineering, or green building technologies, including innovative stormwater management, on the site; or*
2. *The proposal meets one of the following:*
   a. *The proposal will better support the water quality goals of the City's Stormwater Management Manual;*
   b. *The landscaping standards cannot be met on the site because of existing bank and soil conditions such as the presence of riprap or other obstructions;*
   c. *The proposal is necessary to ensure bank stability; or*
   d. *The proposal will allow greater visual access between the trail and other segments of the greenway and will enhance safety for trail users.*

Response: The proposal includes bank stabilization and native planting restoration and is intended to meet F.1 above. The bank stabilization and greenway trails are also intended to meet F.2.c and d.

The proposed restoration project will remove many man-made structures that are currently present along the bank, remove fill material along the shoreline, and make the slope of the river bank shallower, which will increase the area of shallow water habitat available for juvenile salmonids. The current degraded state of the habitat along this portion of the river is typical for sites in Portland that have been subject to past industrial use. The proposed project will increase both the quantity and the quality of the habitat for native fish species in the City of Portland. Not only will in-water conditions be enhanced, but the quality and the quantity of riparian vegetation will also be enhanced by increasing the density of native trees and shrubs. Shading on the Willamette River is not as important as providing a source of large wood and biota, which will benefit native fish species.

The proposed bank stabilization using riprap armoring below ordinary high water is required to balance the natural habitat and user experience needs within the greenway.

The existing river bank is steep and is about 25 ft tall from ordinary low water to top of bank, requiring proposed bank slopes as steep as 2H:1V below ordinary high water to balance the needs for bank enhancement with the needs for the greenway trails and user recreation These slopes below Ordinary High Water require bank stabilization to prevent erosion of bank materials that would potentially endanger the greenway infrastructure while allowing the existing contaminated sediment to enter the river and degrade water quality and habitat. Riprap armoring is the preferred bank stabilization method because large woody debris can be incorporated, planting can be supported in the interstitial spaces of the larger riprap, and installation is straightforward without requiring extensive excavation and foundation work, therefore it can be completed within the in-water work window. The 2H:1V slopes require rip rap armoring for stabilization, while still allowing planting in large woody debris pockets to start 3' above ordinary low water.

CONFORMANCE WITH SOUTH WATERFRONT GREENWAY DESIGN GUIDELINES

1. Design a cohesive trail system

- *Ensure that pedestrian and bicycle connections to the greenway trail from the adjacent accessways or urban spaces are safe, convenient and direct.*

Response: The proposed greenway trail and site plan provide five additional access points to the trail: from the north, by connecting to existing trails; to the west through new public accessways via SW Lane, SW Abernathy, and SW Lowell; and to the south, by connecting to an existing trail.

The trails are designed in a curvilinear manner to maximize views toward the river and are separated from the bank area by retaining walls and a naturalized bank treatment.

- *Align the trail to take advantage of the site's opportunities to enhance the diversity of trail experiences.*
- *Create a continuous greenway trail system with consistency in design elements that celebrate the area's history and character.*

Response: The trail has been designed to observe existing topography that falls toward the river and expose concrete retaining walls along the river banks. These features illustrate the river-based industrial history of the south waterfront area and provide an experience that differs from other sections of the greenway trail.

- *Develop clear and simple signage for shared use, basic rules, wayfinding, and interpretive signage displays.*

Response: Street markers at are provided at the accessway crossings and changes in materials at crossings are proposed to promote safety. The signage will be provided by a signage consultant retained by owner.

2. Address Greenway Edges

- *Address the edges of the greenway where it interfaces with streets and accessways, public open spaces, and bridge structures using the following Greenway Edge Guidelines (2-1 - 2-3).*
  - *2-1 Address Streets and Accessways*
  - *2-2 Address Adjacent Open Space*
  - *2-3 Address Bridges*

Response: The design addressed the edges of the greenway by integrating accessways to the greenway trail, providing access to adjacent open spaces, and providing views of nearby bridges from the pedestrian plaza at the terminus of SW Abernathy. Connections are proposed at the western edge of the site via SW Lowell; in the center of the site at the terminus of SW Abernathy St, and at the eastern edge of the site via SW Lane. The greenway provides access to the existing trail system to the north and south and provides access to proposed open spaces including the Lowell, Abernathy, and Lane pedestrian corridors; and proposed pocket parks within the development.

SW Abernethy St. is a broad, tree-lined pedestrian corridor leading to the greenway. The pedestrian and bike paths are well lit. Signage will be provided at SW River Parkway to each east-west entry

corridor. SW Abernethy and SW Lane St. are lined with storm water management planters and townhomes. Pedestrian circulation also connects to the bicycle trail.

3. Incorporate a diverse set of gathering places

- *Accommodate a range of special activities oriented toward the Willamette River that offer large and small gatherings, play, watercraft launches, and unique viewpoints as extensions of the greenway trail.*
- *Design gathering places to respond to the character of the specific reach's historical context, urban setting, and particular habitat improvements.*

Response: The proposed restoration project will remove many man-made structures that are currently present along the bank, remove fill material along the shoreline, and make the slope of the river bank shallower, which will increase the area of shallow water habitat available for juvenile salmonids. The current degraded state of the habitat along this portion of the river is typical for sites in Portland that have been subject to past industrial use. The proposed project will increase both the quantity and the quality of the habitat for native fish species in the City of Portland. Not only will in-water conditions be enhanced, but the quality and the quantity of riparian vegetation will also be enhanced by increasing the density of native trees and shrubs. Shading on the Willamette River is not as important as providing a source of large wood and biota, which will benefit native fish species.

4. Integrate materials, structures, and art

- *Integrate high quality, contemporary, visible, and easy-to maintain structures and materials which respond to context and need.*
- *Maintain consistency in structures and allow transition in paving materials where new greenway development abuts existing greenway.*
- *Ensure that the greenway trail, its access connections, and the accessways are well lit at night to create a sense of activity and security. Place and shield lighting fixtures so that they do not detract from adjacent use areas.*
- *Integrate art within the greenway through evocative forms and materials, including "found objects".*

Response: Three sitting areas are provided along the pedestrian trail using native basalt custom benches reflecting local materials. Custom large wood benches reflecting the maritime history of the area and provided by local Portland company are located at the end of Abernethy Mall. A water feature referencing the connection to the river is shown at the terminus of the Abernethy Mall and possibly found material from the wood pier to be removed is used as site bollards at the Abernathy connection to the pedestrian trail, which reflects the industrial past of the site.

Asphalt is shown for bike trail and scored concrete for pedestrian trail. These trails will connect with the existing asphalt bike trail and scored concrete pedestrian trail to the north, and to the path crossing the Old Spaghetti Factory site to the south.

The proposed materials for both the pedestrian and bicycle trails match the existing trail materials to the north and south of the site.

5. Enhance the riverbank

- *Utilize riverbank stabilization strategies that enhance the river and riverbank ecosystems.*
- *Where appropriate, integrate public access to the water that is safe and supportive of adjacent riverbank areas.*

Response: Riverbank stabilization strategies will include class 700 riprap below ordinary high water with large wood to provide cover and refugia for salmonids. The large wood will be installed during riprap installation and will be anchored by the bank material and some additional ballast boulders. Overall, the mass of the river bank is adequate to install large wood with an overall length of 24 to 30 ft. Above ordinary high water the slopes will not be armored and will rely on native vegetation establishment to provide stability. Riparian vegetation is degraded in this reach of the river and robust native plantings will ensure the riverbank's riparian functions are enhanced and even restored. Bio-degradable matting will be installed after construction to provide stability until the native trees and shrubs are established. The large wood and the native riparian plantings, such as willows, ninebark, and other native shrubs will provide flow complexity and diversity resulting in cover and refugia (areas of low velocity behind the debris and a slow-moving fringe) for ESA listed species, while also improving the nutrients available to support a healthier benthic invertebrate population to promote rearing.

Existing mildly sloped alcove areas where finer sediment appears to persist will be armored and overtopped with a 1.5 ft of 2.5" – 0 well graded rounded river rock to provide a substrate that can support benthic invertebrates. Armoring is still required to prevent undermining of the bank stabilization during high erosion events. Fine sediment was observed in these locations during low water; however, it is unknown if this sediment is persistent long term or if it is removed during high erosion events and recruited during other periods. Additional fine sediment should be recruited to these areas during low water periods.

6. Design Diverse Plant Communities

- *Select appropriate species of native and native-like plants based on the soil, light, moisture conditions, context and adjacent uses of the site.*
- *Create and enhance habitat through renaturalization, encouraging a structurally diverse and ecologically valuable greenway.*

Response: See the attached Habitat Report for information about shore stabilization and restoration of habitat. Rip-rap in Subarea 1 undulates to allow plant material to weave in natural form adjacent to the river.